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**Notice of Allowability**

Application No.

10/630,776

Examiner

Saif A. Alhija

Applicant(s)

GOTO ET AL.

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE Filed 14 May 2007.
2. ☒ The allowed claim(s) is/are 1-7,9 and 10.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 06-22-07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 20070724.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
KAMINI SHAH  
SUPERVISORY PATENT EXAMINER

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**DETAILED ACTION**

1. Claims 1-7 and 9-10 have been presented for examination.

Claim 8 has been cancelled.

**Examiners Amendment**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ed Tracy on 31 July 2007.

The application has been amended as follows:

Please amend claim 7 to read:

Claim 7: A computer program product embodied on a computer-readable recording medium, comprising code, when executed causes a computer to perform steps comprising:

calculating in an arithmetic device

a plurality of calculated mode vectors, and

natural frequencies or resonance frequencies

of a plurality of components of the object said

calculating step including

executing a computer implemented finite-element

method model on the object to indicate a boundary condition

between the plurality of components of the object;

extracting an extracted, calculated mode vector of the

plurality of calculated mode vectors having a degree of

correlation at or above a predetermined threshold, said degree

of correlation being relative to an experimental mode vector

obtained in an experiment, --**said extracting step includes**

**reducing a number of the plurality of calculated mode**

vectors by filtering said plurality of calculated mode vectors using at least one of order ratio filtering, component comparison filtering and frequency filtering;--  
and

identifying the boundary condition of the elements based on the extracted, calculated mode vector and the natural frequency or the resonance frequency corresponding to the extracted, calculated mode vector.

**Reasons for Allowance**

3. The following is an examiner's statement of reasons for allowance: The claims are novel and nonobvious over the prior art of record for the following reasons. The prior art of record does not disclose or suggest the following features in light of the specification as well as in combination as arranged in the claims:

The extracting step includes reducing a number of the plurality of calculated mode vectors by filtering said plurality of calculated mode vectors using at least one of **order ratio filtering, component comparison filtering and frequency filtering**. The filtering processes are defined in the specification of the instant application in Figure 4, elements 122, 124, and 126 as well as with respect to **order ratio filtering**, see paragraphs 60-61, **component comparison filtering**, see paragraphs 62-65, and **frequency filtering**, see paragraph 66. The limitations not corresponding to the filtering processes described have been anticipated by the previously cited references, Stubbs U.S. Patent No. 5,327,358 as well as Liu. However the filtering processes as defined in the specification in combination and conjunction with the claims as arranged render the claims novel and non-obvious. In addition, software packages such as ANSYS and NASTRAN which perform FEM analysis are relevant prior art but lack the specificity to overcome the claims as arranged with specificity drawn to the filtering processes defined in the specification and recited above.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

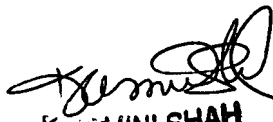
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saif A. Alhija whose telephone number is (571) 272-8635. The examiner can normally be reached on M-F, 11:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-22792279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAA

August 2, 2007

  
KAMINI SHAH  
SUPERVISOR PATENT EXAMINER